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ABSTRACT

This study examined whether the educational practice of retaining students in junior first grade for a year between kindergarten and first grade enhanced their academic achievement and self-concept of academic ability. Subjects were 120 students randomly selected from a midwestern school district and divided equally into 4 groups: (1) recommended for first grade and placed in first grade; (2) recommended for junior first grade and placed in junior first; (3) recommended for junior first grade but placed in first grade; and (4) borderline between junior first grade and kindergarten, but placed in first grade. The groups were compared on 14 variables: (1) gender; (2) birth month; (3) retention; (4) absences; (5) lunch status; (6) class placement in mathematics; (7) grade point average in mathematics; (8) mathematics total on California Achievement Tests; (9) category of achievement in mathematics on the Michigan Educational Assessment Program; (10) class placement in reading; (11) grade point average in reading; (12) reading total on California Achievement Tests; (13) category of achievement in reading on the Michigan Educational Assessment Program; and (14) self-concept of academic ability. Males were retained in junior first grade at twice the number of females, and several variables were significantly different for the four groups, including self- concept of academic ability. Findings indicated that an extra year of junior first grade did not enhance academic achievement or self-concept of academic ability. (Contains a 49-item bibliography.) (WP)

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DOES AN EXTRA YEAR

(JUNIOR FIRST GRADE) ENHANCE

ACADEMIC ABILITY AND

SELF-CONCEPT OF ACADEMIC ABILITY?

BY: MARY ANN BOETTGER, Ed.D

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DEDICATION

This document is dedicated to the children attending the Bay City Public Schools. They were "the wind beneath my wings".

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Dr. Mary Ann Boettger

Information in this document is based on a dissertation **"The Influence of Junior First Grade on Academic Ability and Self-Concept of Academic Ability" by Mary Ann Boettger, Ed.D., Western Michigan, 1991.** Four groups (4) were compared on fourteen (14) variables. The major recommendation was elimination of the extra year between kindergarten and first grade.

The focus of the study was an educational practice of retaining students in junior first grade for a year between kindergarten and first grade.

Four groups of students were compared:

-1. recommended for first and placed in first (F-F)
-2. recommended for junior first and placed in junior first (JF-JF)
-3. recommended for junior first and placed in first (JF-F)
-4. borderline between junior first and kindergarten, but placed in first (B-F)

The groups were compared on:

1) gender
2) birth month
3) retention
4) absences
5) lunch status
6) class placement in mathematics
7) grade point average in mathematics
8) mathematics total on California Achievement Tests
9) category of achievement in mathematics on the Michigan Educational Assessment Program
10) class placement in reading
11) grade point average in reading
12) reading total on California Achievement Tests
13) category of achievement in reading on the Michigan Educational Assessment Program
14) self-concept of academic ability

The subjects were 120 randomly chosen students from a midwestern school district. There were 30 subjects in each group. The study and analysis were conducted in 1990-1991.

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DOES AN EXTRA YEAR (JUNIOR FIRST GRADE) ENHANCE ACADEMIC ABILITY AND SELF-CONCEPT OF ACADEMIC ABILITY?

By: Mary Ann Boettger Ed.D.

LITERATURE REVIEW

Educators and researchers are questioning the educational practice of retaining students (Chape, 1984; Doyle, 1989; McNergney & Haberman, 1989; Shepherd & Smith, 1989). Researchers studying student placement in the same grade or a special program for the duration of a year in lieu of academic promotion, found negative outcomes. Desirable school outcomes of increased academic achievement and positive self-concept of academic ability, among other student developmental outcomes, have been found to be negatively affected by retention (Chafe, 1984; Doyle, 1989; McNergney & Haberman, 1989).

BACKGROUND OF RETENTION

Doyle (1989) wrote that American public schools retained approximately 29% of the students in the early 1900s with some elementary students retained two or three times. Over half of the elementary students were dropouts and less than 10% who started high school graduated.

As the number of students increased, American schools sequenced grades by age. The age of the student influenced grade placement in the district under study as early as 1904. Twelve years of schooling were organized into three departments of 4 years. Grades were further divided into B and A sections, as one B, one A, etc. First graders were admitted to school only the first 2 weeks of each semester with entry in September for B and January for A. These students were 7 years old and received enough home or school education so they did not qualify for the subprimary (kindergarten) level (Bay City Board of Education Manual, 1904).

The kindergarten year was regarded as a rite of passage with students passing from nonstudents to quasi-students to first grade students (Cox, 1980). Mastery of curriculum at each grade became criterion for promotion (Chafe, 1984). An interruption in movement from one grade to the next would result in placement in the same grade or a special program (Chafe, 1984). This interruption was termed a retention and became the practice when a student did not master the required curriculum. In 1904, a New York Schools' Superintendent voiced concern with improving low achievement through retention (Coffield & Blommers, 1954).

Retention as an educational remedy for academic failure has been studied to determine the positive or negative effects. Finlayson (1977) wrote that nonpromotion tells children that they are failures in school. Chafe (1984) concluded that the threat of retention for low-achievers does not increase motivation and most students do not benefit from retention. McNergney & Haberman (1989) wrote that retention: 1) was temporary with negative long-term effects; 2) harmed even young children; 3) decreased attendance, self-concept, attitude, personal and psychological adjustment; 4) did not prepare students any better than one year in kindergarten. Two years in kindergarten or kindergarten and transition produced similar, negative results; 5) did not help students catch up or provide homogeneous classes by retaining 5-10 per cent of the students.

Two recent studies and the findings are discussed in the following section.

A meta-analysis by Holmes and Matthews (1984) of 44 retention studies was extended by 19 additional studies (Holmes, 1989). Combined, Holmes found 54 negative and 9 positive studies. Cautions regarding the 9 studies were: 1) intensive remediation and unusual ability of students were involved, and 2) grade peers rather than age peers were

compared with the positive results disappearing when longitudinal studies were analyzed together. If IQ and past achievement were matched, the negative effect of repeating a grade averaged a -.30 standard deviation.

Meisels and Liaw (1991) used data from the National Education Longitudinal Study of 1988 to examine the efficacy of retention in kindergarten through third grade. The 1988 study concluded that at the eighth grade, students retained demonstrated lower academic achievement, self-concept, and internal locus of control. Those retained were likely to be boys, minorities, and of lower socioeconomic status. Other conclusions of the study were:

1) Blacks and Hispanics were retained in greater proportions than whites, boys outnumbered girls, lower socioeconomic status (SES), and students in first through third grade were more likely to be retained. Retained Kindergartens were more likely to be white with higher SES. The largest number of retentions occurred in the first four years of school.
2) Early retainees, when compared with later retainees, were white, male and younger. The SES did not differ between early and late retainees. Schools initiated more retentions than parents, and parents were more likely to request early retentions.
3) Early retainees were more likely to have learning problems, and be placed in special education. They had fewer emotional and behavioral problems than later retainees. Parents were more satisfied with the education of the early retainee. There were no significant differences at eighth grade, on achievement test scores or self-concept. The comparisons did not favor early or late retention. When the retainees were compared with the matched never-retained group, the latter had significantly higher grades, higher and more positive self-concept,

more internal locus of control, and parents were more satisfied with their children's school experience. Early retainees had lower grades and test scores, more learning problems (1½ times higher), and were more often assigned to special education (2 times higher). Retained students were at risk in cognitive domains.

The common characteristics of junior first and retained students were:

1) most were boys, especially those born in the last half of the year (Carll & Richard, 1977; Stennett & Earl, 1984). There were twice as many males as females in special programs (Schurr et al., 1967);
2) most were chronologically older by one or more years (Chafe, 1984);
3) most had more absences (Shepherd & Smith, 1989);
4) socioeconomic status was lower (Brookover et al., 1967).

RETENTION AND ACADEMIC ACHIEVEMENT

Research studies and review of literature dating back 80 years conclude that retention provided no academic benefits and often lowered test scores (Chafe, 1984; Doyle, 1989; Finlayson, 1977; McNergnery & Haberman, 1989; Pipitone, 1986; Shepherd & Smith, 1989). Findings in one study showed a gain of one month for one year of retention (Shepherd & Smith, 1987), and the impact of a junior first or transition room appeared detrimental to early reading achievement when compared with students not retained (Talmadge, 1981). The researchers, in a study of placement, explained that irreversible changes in public identity and alignment with the label of deviant occurred among students removed from "regular student" to a lesser role (Schurr et al., 1967).

RETENTION AND SELF-CONCEPT OF ACADEMIC ABILITY

Research in the 1960s and 1970s dramatically increased

studies in student achievement and school social characteristics after passage of Public Act 89-10. The Act resulted in Title I Reading and Headstart as examples of improved and expanded programs which shifted emphasis to enhancement of self-concept of children. Self-concept was a research topic.

Major findings of fourth and six grade subjects in Cooperative Research Project 1008 were: the self-concept ratings of girls at both grade levels were significantly higher than boys; intelligence had no significant relationship with achievement when considering self-concept of ability and achievement (Bledsoe & Garrison, 1962).

Definition of self-concept of academic ability was "the individual's assessment of his or her ability to learn in the school context". This assessment is a comparison acquired through interaction and varies according to the individual's perception of what "significant others" (parents, teachers, peers, friends) think the student is able to learn (Brookover et al., 1962). Unless there is a possibility of success, the person will not try to accomplish the task. (Sociology of Education, 1964, p. 275).

Cooperative Research Project No. 1636 (Brookover, LePere, Hamachek, Thomas & Erickson, 1965) based a study on the assumptions that academic achievement is limited by self-evaluation or low self-concept of academic ability and that higher evaluations would enhance higher student achievement. Three 1-year experiments for ninth graders were developed involving 1) parents of low achieving students, 2) a counselor, and 3) an expert. A second component of this research was a longitudinal study with eighth, ninth, and tenth graders. There was a significant gain in self-concept of ability and grade point average when working parents represented academic significance to their child. Neither the counselor nor the expert influenced change in the variables.

Towne & Joiner (1966) completed a project funded by

the United States Department of Health, Education, Welfare, Office of Education, Division of Handicapped Children and Youth, and Michigan State University. A time-series design was used with six observations made prior to selection and during the first year of placement. One instrument used was Brookover's General Self-Concept of Ability Scale.

Conclusions stated that during the first year of placement, academic expectations were not on a downward linear trend (.05), orientation to the special class remained positive (89 to 100 percent), placement of educable mentally retarded students in a special placement enhanced academic performance because of the special education label and removal from "regular student" to a lesser role. This study posed the question of whether or not the negative self-concept of academic ability was associated with placement in a special class.

The question of whether a two-year placement resulted in a temporary, positive effect and explanation of change in academic self-concept of ability was investigated (Schurr, Brookover, Towne, Hohn & Joiner, 1967). Chapter I of the study explained that exclusion from the original group caused irreversible change in public identity and alignment with the label of deviant.

This study explored whether time in a special class lowered self-definition (significant, increased last year and one-half), whether realization of failure took time after placement (not significant), whether academic aspirations changed the second year of placement (no significant change) and whether return to regular classes was significant (first year back was significant and descending linear).

Self-concept of ability sets limits on learning choice, the degree of application to study that learning, and unless there is a possibility of success, the person will not try to accomplish the task. Major components of self assessment are possibility of success, rewards, costs, and consequences

that are economic or social (Brookover & Erickson, 1975).

Earlier research concluded that self-concept is not negatively affected by retention (Finlayson, 1977). However, later studies modified these conclusions by stating that self-concept improves during the year of placement, but may disappear over time (Chafe, 1984) and that the extra year does not boost self-concept (Shepherd & Smith, 1987).

The most comprehensive and recent publication reviewed was by Shepherd and Smith (1989). The conclusions reiterated findings of the review of literature.

An eight-question, paper and pencil scale was developed for use in an individual or group setting to study self-concept of academic ability (Brookover, Paterson & Thomas, 1962). Analysis of self-concept of academic ability indicated that this variable changes according to the student's perception. The conditions yielding changes were: 1) expectations and evaluations of "significant others", 2) the social situation, including placement in junior first grade.

JUNIOR FIRST GRADE

A literature search reviewed professional and popular books, magazines, newspapers and dissertations. Focus of the review centered on the definition of junior first, number of junior first graders in Michigan, and positive or negative findings of junior first grade studies.

The concept of development in the field of early childhood education has two dimensions: 1) dynamic, which describes sequence, transformation and order in which learning and development occur, delayed impact, and cumulative effect of frequent or repeated experiences; 2) normative, which describes ages and stages (a point in time) at which most children can or cannot perform (Katz, 1988).

The dynamic aspects of child development in thought and knowledge were investigated by Jean Piaget, a Swiss writer, researcher and psychologist. Developmental patterns of

individuals were noted and retained through notations of approximate ages for each stage. Cognitive thought was found to be a developmental, sequentially ordered process that matured over time (Bybee & Sund, 1982).

Dr. Arnold Gesell studied the normative dimension of development in the early 1900s (Ilg, 1982). Clinical observations yielded norms and developmental or behavioral age descriptions in the mental, physical, social, emotional areas, and play interest of children. Developmental age was a numerical score of total organism functioning as determined on the Gesell School Readiness Test. Developmental age in school placement has been the focus of activity at the Gesell Institute of Child Development since 1951. Placement by developmental age would remediate or prevent school learning problems, insure readiness and success in accomplishing school requirements, maximize potential, and have children academically ready for the grade.

Junior first grade was introduced by the Gesell Institute of Human Development, New Haven, Connecticut. Students were maintained in a special program between kindergarten and first grade (Ilg, Ames & Baker, 1981). Students "unready" for first grade were defined as not ready to cope and develop socially, emotionally, academically and physically in the school environment without undue stress, as determined by the Gesell School Readiness Tests. The year provided time (an additional year to grow), experiences (an environment of movement with concrete and direct discoveries),and acceptance (unrestricted recognition as a unique person) (Carll & Richard, 1977).

Remedial education and Title I programs of the 1960s attempted to "fix" students. In 1970, school districts noted a high number of students labeled remedial and turned to developmental psychologists and educators for early intervention. Harsh realizations emerged when educators

voiced concern because "more of the same curriculum" did not yield the desired student stability and academic success. Transitional rooms became an alternative to traditional retention. Junior first grade was one of the emerging intervention techniques as a year to grow, and a palatable means of retaining, failing and flunking students.

Robert W. Kelly filed a class action lawsuit against the Metropolitan Nashville-Davidson County Public School System in 1955 aimed at desegregation. As a result of court orders, the Board of Education was required to implement intervention and remediation programs in the form of transitional classes for students not ready for first grade curriculum after completing kindergarten (Whitefield, 1985).

A longitudinal study (Ferguson, 1991) investigated the candidates for a transitional first grade and compared the placed students with not-placed students at the second grade. Although the time span of that longitudinal study was not as extensive as this dissertation, the findings further supported the findings of this study.

The subjects were matched on chronological age and sex when they started kindergarten. Measures used at the end of the second grade were SRA Achievement Series, behavioral domain evaluation by teachers, and confidential questionnaires by parents. Ferguson (1991) found no difference in academic and social-behavioral domains, except aggressiveness for the placed students as recorded by teacher ratings.

Ferguson (1991) concluded that the readiness delay adjusts whether the child is placed in a marking-time program or placed in the next grade. He concluded, further, that the "dumbed-down" curriculum negatively affects students because they have been taught to sit back and coast. He maintained that children are aware they have failed kindergarten. Also, his study indicated no statistical significance in education, occupation, or value of education on the part of mothers and fathers.

Junior first grades operated in eighty-eight public schools in Michigan for a duration of 1 to 20 years (Riley, Jaworski & Stoury, 1984). The total number of students enrolled was not available from the Michigan State Department of Education, Early Childhood Division in March 1990. State accounting forms list kindergarten and first grade. Some districts counted junior first graders as kindergarteners since the curriculum was an extension of kindergarten and others counted them as first graders since the kindergarten year was completed (Boettger, 1991).

NUMBER OF JUNIOR FIRST GRADERS IN THE STATE

A study conducted by Riley et al., (1984) during the same year that these subjects were in kindergarten (1983-1984) listed 88 districts operating junior first grades. The number of students involved was unavailable.

Child accounting forms for the state of Michigan listed Pre-K, K, 1, etc., however, the number of junior first graders in Michigan was unknown.

During January 1991, this study was extended through a mailed survey to the 559 public school superintendents asking the number of junior first graders included in each district's Fourth Friday count for the 1990-1991 school year. The districts were listed in Michigan Educational Directory, 1991. Districts that did not return the postcard were telephoned, and responses were obtained from 100% of the districts.

A total of 125 districts operated junior first grades with 3,828 students enrolled on February 1, 1991. Assuming per pupil cost of $2,000, the cost for this program for the 1990-1991 school year in Michigan was $7,656,000.

WHY WERE THE NEGATIVE RESULTS OF RETENTION DISREGARDED?

1) There was a genuine desire to assist the student who

could not meet the demands of the curriculum. However, the student was viewed as deficient and in need of repair when what was needed was an adjusted curriculum to insure success.

2) Cumulative results of yearly and daily reminders of being a failure were not considered. A retained student was constantly reminded of being a failure because the original school peer group remained one or more grades ahead during the school years.

3) Financial stability for the Gesell Institute may have been a factor. Material, test and workshop costs benefited the organization.

FUTURE EDUCATIONAL IMPLICATIONS

1) There is a need for a state level department with authority and adequate personnel to execute changes which directly impact positive student learning. A variety of agencies, organizations, and citizens must be active educational decision makers.

2) School districts must eliminate the additional year between kindergarten and first grade. The goals of positive academic achievement and self-concept of academic ability are not realized. A phase-in timeline of 2 years would allow preparation of staff and alleviation of teacher "fears".

3) Retention, in the form of an additional year of instruction, must be eliminated. Students must be assisted in learning through guided help for shorter durations. The individual, varied, erratic yet normal learning patterns of the young child must be considered in all educational and curricular decisions.

4) Dissemination of research findings regarding junior first grade, retention in an alternate program or in grade, the foundations of child development, and the influence of educator expectations on the degree that a student learns must reach the educational practitioner. Intermediate School Districts could aid in gathering and publicizing

this information.

5) The results of the Self-Concept of Academic Ability Scale indicated that students should be kept with their classmates and expectations for success heightened. These research findings should be shared with classroom teachers and become district policy.

6) Educational practices of tracking and maintaining students at the lower levels throughout their elementary and intermediate years must be eliminated. Education for increased knowledge at the fastest rate a child can learn, without frustration, must be the goal.

7) Each student's perspective and desire to learn must be included as a factor when educational goals are decided. The best approach might be to present the sequence of learning, then ask the child for goals for that year. Numerous times, the adult estimates are much lower than the student's learning potentials. Studies on motivation to achieve indicate that attainable goals are positive and unattainable goals and expectations produce discouragement and frustration. There is either hope of success or fear of failure and avoidance.

8) The grade level lock-step approach and limitation of textbook contents provide superficial planning by the adults while suppressing the child's desire to learn. The "learning ceiling" to accomplishments, which these practices perpetuate, must be eliminated.

9) There must be avenues for students labeled "low" to break out of the track and move to higher levels.

10) Natale (Executive Educator, 1991) wrote that if retention is abolished, several issues would surface: --a common belief that if children try, they can be normal, --students should be ready for the grade, -where will we put the low-achieving students, --need for lower class size of 15:1.

Possible solutions to these issues were: --convert

schools so traditional grade levels and grading systems are changed, --use developmentally appropriate curricula, --increase parent involvement, --realize that children learn at different rates, --provide after-school tutoring, and summer school, --change the knowledge base of the professionals, and --track retentions with accuracy.

The next section contains the study and limitations, design, methodology, subjects, instrumentation, data gathering and analysis.

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THE STUDY

THE INFLUENCE OF JUNIOR FIRST GRADE ON ACADEMIC ABILITY AND SELF-CONCEPT OF ACADEMIC ABILITY (Boettger, 1991)

This study focused on the question of whether junior first grade placement enhances academic achievement and self-concept of academic ability.

Limitations in this study were:

1) Two hundred and seventy-nine students from the original population were no longer in the district. There was no differential attrition from the original population across groups.
2) Students in the junior first grade group were and remained chronologically one year older as they moved through the regular grades, at administration of tests, and collection of data.
3) Placement criterion was subjective and lacked tight controls. Criterion rested with administrator or teacher observations and judgments, testing, unmet grade objectives, parent requests and availability of space in the program.
4) Parent approval for placement was necessary, and the parent support may be an operating factor that was different than for students in the other groups.
5) Data presented was for the school years 1983-1984, 1989-1990 and 1990-1991.
6) Results were reported as observed. Subjects selected by a Table of Random Numbers remained in the study even when data for them was missing in totals in mathematics and reading from the California Achievement Tests and category of achievement on the Michigan Educational Assessment Program. The intent was to report the findings as they actually existed.

Terms and definitions as defined in this study:

-Absences: number of half-days not in attendance.

-Academic Achievement: degree of mastery in subject areas taught in school, mathematics, reading; class placement; grade point average; totals on California Achievement Tests and categories of achievement on the Michigan Educational Assessment Program.

-Birth Month: July 1977 through May 1978--June 1978 through November 1978.

-Class Placement: location of a student in mathematics and reading classes.

-Grade Point Average: A=4.0, A-=3.7, B+=3.3, B=3.0, B-=2.7, C+=2.3, C=2.0, C-=1.7, D+=1.3, D=1.0, D-=0.7 E+=0.3, E=0.00. Letter grades were converted to numerical equivalents, added, then divided to provide an average.

-Grades Retained: grades repeated, including junior first.

-Hot Lunch Status: designation of free, reduced or fully paid when purchasing a hot lunch.

-Junior First Grade: non-traditional academic year preceding regular first grade for students who completed kindergarten. This year was called junior first, transitional first, readiness room, transition room, primary first, pre-first, young six, bridging room, full-day kindergarten, and developmental first. Placement in junior first was considered a retention in this study.

-Retention: educational practice of student placement in the same grade or in an alternative program for an extra year of instruction.

-Self-Concept of Academic Ability: student's self-evaluation of his or her ability to master the requirements of school work.

DESIGN AND METHODOLOGY

This was a study of one junior first grade and was designed to test seven research hypotheses:

1. The number of males recommended for first and placed in first grade (F-F) will be less than those males recommended for junior first and placed in junior first grade (JF-JF), which will be less than those males recommended for junior first and placed in first grade (JF-F), which will be less than the number of males in borderline, but placed in first grade (B-F) (Schurr et al., 1967).

2. The numbr of students with July 1977 through May 1978 birthdays recommended for first and placed in first grade (F-F) will be greater than those students recommended for junior first and placed in junior first grade (JF-JF), which will be greater than those students recommended for junior first and placed in first grade (JF-F), which will be greater than students in borderline, but placed in first grade (B-F) (Carll & Richard, 1977; Stennett & Earl, 1984).

3. The number of retentions in a grade for students recommended for first and placed in first grade (F-F) will be less than those students recommended for junior first and placed in junior first (JF-JF), which will be less than those students recommended for junior first and placed in first grade (JF-F), which will be less than students in borderline, but placed in first (B-F) (Chafe, 1984).

4. The number of half-day absences for students recommended for first and placed in first grade (F-F) will be less than those students recommended for junior first and placed in junior first grade (JF-JF), which will be less than those students recommended for junior first and placed in first grade (JF-F), which will be less than students in

borderline, but placed in first grade (B-F) (Shepard & Smith, 1989).

5. The number of needy lunch status for students recommended for first and placed in first grade (F-F) will be less than students recommended for junior first and placed in junior first (JF-JF), which will be less than those students recommended for junior first and placed in first grade (JF-F), which will be less than students in borderline, but placed in first grade (B-F) (Brookover et al., 1967).

6. The academic achievement for students recommended for first and placed in first grade (F-F) will be higher than students recommended for junior first and placed in junior first grade (JF-JF), which will be higher than those students recommended for junior first and placed in first grade (JF-F), which will be higher than students in borderline, but placed in first grade (B-F) (Chafe, 1984; Doyle, 1989; Finlayson, 1977; McNergney & Haberman, 1989; Pipitone, 1986; Shepherd & Smith, 1989).

7. The self-concept of academic ability for students recommended for first and placed in first grade (F-F) will be higher than students recommended for junior first and placed in junior first grade (JF-JF), which will be higher than those students recommended for junior first and placed in first grade (JF-F), which will be higher than students in borderline, but placed in first grade (B-F) (Chafe, 1984; Shepherd & Smith, 1989).

SUBJECTS

Demographics

This study was completed during the 1990-1991 school year in a central Michigan public school. The district covers 254 square miles which included urban, suburban, and rural areas and all or part of 3 cities, and all or part of 11 townships in 2 counties. The four major employers were:

1) General Motors, 2) Bay Medical Hospital, 3) Bay City Public Schools, and 4) agriculture in the outlying areas.

The school district reopened elementary buildings due to space needed for computer programs and population shifts-three in 1984-1985, one in 1985-1986, and one in 1986-1987. District-wide consolidation took place during the summer of 1990, closing one high school, one intermediate school, and five elementary schools. This school district had not passed a millage election since 1979 (Hollenbeck, 1990).

Students

The kindergarten classes totaled 785 in the spring of 1984 with 745 screened on the Gesell School Readiness Tests and 40 not tested due to absence. Recommended placement was 339 students to first grade, 182 to junior first grade, 180 at borderline, 44 retain in kindergarten, and 40 absent. The district provided 100 spaces for the junior first grade program and a child was placed only with parent approval. Thus, of the 182 students recommended for junior first grade, the 100 placed had parent approval.

Recommended placement of the 785 students from the 1983-1984 kindergarten was:

Recommended Placement	# of Students	Percentage
First Grade	339	43.2%
Junior First	182	23.2%
Borderline	180	22.9%
Retain in Kindergarten	44	5.6%
Absent for Testing	40	5.1%

Final placement for the entire group is unavailable because of attrition. The final placement of the surviving students became the basis for the four groups in this study:

1) Recommended for first and placed in first (F-F).
2) Recommended for junior first and placed in junior first (JF-JF).
3) Recommended for junior first and placed in first (JF-F).
4) Borderline between junior first and kindergarten, but placed in first (B-F).

During 1990-1991, the subjects were attending seventh grade if they had not been retained, sixth grade with retention in developmental kindergarten, junior first or any one regular grade, and in fifth grade if they experienced two retentions. One student, due to advanced age when entering kindergarten, attended ninth grade in high school.

The fifth graders were housed in K-5 elementary buildings. The sixth and seventh graders were housed in two buildings: 1) a combined intermediate and high school that enrolled 759 sixth, seventh, and eighth graders, and a high school enrollment of 1,507 and 2) a mid-district building housing 1,517 sixth, seventh, and eighth graders in one building as a result of summer consolidation.

Sampling Plan--Students

Trained recorders located and highlighted the names of 1990-1991 enrolled students who attended kindergarten in this district during 1983-1984. Official enrollment computer sheets that listed sixth and seventh graders and all students district-wide were used.

Original spring 1984 class lists were used to identify subjects. Since this study was conducted in the 1990-1991 school year, each group evidenced attrition from the original membership. Attrition accounted for a total loss of 279 (35.5%) students. The breakdown by recommended placement from the original pool was:

Recommended Placement	# of Students	Percentage
First	116	14.7%
Junior First	64	8.1%
Borderline	66	8.4%
Retain in Kindergarten	18	2.2%
Absent for Testing	15	1.9%

The rate of attrition was fundamentally the same across the groups. Whether students remained in the district or left did not appear to be a function of the group.

Subjects eliminated from this study left the district, attended parochial schools in the area, attended a district school in fifth or ninth grade, or parents refused to submit signed consent forms. The surviving subjects who were retained as kindergarteners totaled 13. This group and the 20 absent were eliminated due to low number of subjects.

Final placement determined the base pool of subjects. The participating groups and the number of surviving subjects possessing consent forms, and completed Self-Concept of Academic Scales on May 17, 1991 were:

Recommeneded Placement	Survivors	Percentage
1. Recommended first and placed in first (F-F)	142 of 213	66.6%
2. Recommended junior first and placed in junior first (JF-JF)	44 of 47	93.6%
3. Recommended junior first and placed in first (JF-F)	56 of 59	94.9%
4. Borderline, but placed in first (B-F)	64 of 107	59.8%

The groups were equalized to 30 subjects each by using a Table of Random Numbers in Educational Research (Borg & Gall, 1983). The table was entered by using white poker chips with one numeral (1-10) written on each one to determine which column would be used. The chip with numeral 3 was drawn. Chips with the letter T for top and B for bottom were drawn for a 2 of 3 direction. Starting point of the columns would be the bottom. Chips with the letter R for right and L for left were drawn to determine which side of the column would be used. L was drawn 2 of 3 times. The research team, consisting of trained volunteers, monitored and participated in this activity. The 30 subjects per group were selected by using the Table of Random Numbers in this order: Column 3, bottom to top and numerals on the left side of the column. To insure sufficient number of columns

for use, progression of the columns was in sequence: Column 3, then 4, then 5. A total of 120 subjects in four groups were selected for this study.

DESIGN AND INSTRUMENTATION

Kindergarten teachers screened the 1983-1984 kindergarten students in spring 1984. A two-part screening test that was developed in the district was administered by the teachers. The test was composed of a) "Complete the Person", which required students to complete the figure of a person by drawing missing body parts, and b) "Shapes" which required students to use a model to copy the forms of a circle, cross, square, triangle, divided triangle, and diamond. Scoring was based on guidelines of the Gesell Readiness Test (Gesell Institute of Child Development, 1978) and averaged into a developmental age for each student. The recommended placement was based solely on the developmental age obtained from the individual student's averaged scores on the tests.

The four categories of recommended placement as determined by the spring tests were: 1) first, 2) junior first, 3) borderline, and 4) kindergarten. These were reduced to three final, fall placements (first, junior first, and kindergarten) for the year following kindergarten. The borderline children were usually placed in first grade, even though they would have difficulty successfully completing the curriculum. Final placement of the original 785 students was based on two factors: 1) test scores, or 2) recommendation of the teacher and administrator. Final placement in junior first was determined by teacher and administrator observations and judgments, testing, unmet grade objectives, parent approval, and available space.

California Achievement Tests (CAT)

Achievement in reading, spelling, language, mathematics

and study skills was measured by the California Achievement Tests (CTB/McGraw-Hill, 1987). CAT tests were timed; however, the allotment permitted almost all students to attempt all items. Reliability for CAT Form E is measured by internal consistency, standard error of measurement, and standard error curves. The percentage in the norming sample who mastered the objective at a given level and grade, and the use of the Bayesian procedure supported content validity. Summary data, intercorrelation coefficients, and test-retest reliabilities were available.

Scale score statistics included means, standard deviations and medians for levels 10-20 based on response-pattern scoring. This study compared the Normal Curve Equivalency of scale scores at the fifth and sixth grade on CAT Form E.

A student's score for each objective was reported on a Mastery Band within a confidence interval of 0.00 to 1.00. There was a 2 to 1 odds that the child's score would lie within the band which was a 67% confidence interval (CTB/McGraw-Hill, 1987).

Michigan Educational Assessment Program (MEAP)

The following information was in the Technical Report, Volume 1 and 2 (Phelps, Donovan, Roeber, Carr & Caswell, 1980, 1981). These public documents are not copyrighted, and permission to reprint was not necessary.

Michigan tested selected minimal performance objectives in reading and mathematics in 4th, 7th, and 10th grade. The tests were not timed.

The Kuder-Richardson Formula 20 (KR20) was used to estimate internal consistency as a measure for reliability. Item discrimination and performance on all objectives were estimated by the point biserial correlation coefficient. Phi correlation coefficients reflected level of difficulty, and "The 1980 Experimental Mathematics and Reading Study" (Phelps et al., 1980) provided stability over time.

Content validity was based on a) critical judgments and consensus of teachers; b) measurement and curriculum specialists; c) those involved in development, revision, and construction of the minimal skills objectives and test measures; and d) citizens.

This study used student ranking of category in mathematics and reading. The number of objectives attained provided the ranking of 0, 1, 2, 3, or 4 and was listed on the Individual Student Report. An objective was attained if two out of three test questions were answered correctly. Since the performance objectives tested were minimal and attainable, most students were expected to be at Category 4.

The ranking by category of achievement was determined by the number of objectives attained:

Category 4 = 3/4 or more objectives attained
Category 3 = 1/2 to 3/4 objectives attained
Category 2 = 1/4 to 1/2 objectives attained
Category 1 = 1/4 or less objectives attained
Category 0 = no objectives attained

Report Cards

The final letter grade, in mathematics and reading, for each child was converted into a numerical score. The letter-to-numerical score was developed in the district (A=4.0, A-=3.7, B+=3.3; B=3.0, B-=2.7, C+=2.3, C=2.0, C-=1.7, D+=1.3, D=1.0, D-=0.7, E+=0.3, E=0.0. No weighted scores or differentiation was considered for students in remedial or advanced classes (Alpha Math, Program for the Academically Talented, or Special Education). The grades were taken at face value at the student's present placement.

Attendance which was recorded on report cards was compared. The recorded number of half-day absences was assumed accurate.

Class Placement

Academic achievement was measured by the location of a

student in mathematics and reading class as determined by the teachers. Students were ranked at high, middle or low placement. Counselors provided this information.

General Self-Concept of Academic Ability (GSCA)

The following information can be found in Self-Concept of Ability and School Achievement, Cooperative Research, Project '845 (Brookover et al., 1962). Permission for use of information and administration of the scale was obtained from the principal investigator, Dr. Wilbur Brookover.

The first study investigating self-concept of academic ability was Project 845. Development of the first instrument to measure this variable was completed during Project 845, and the instrument is referred to by several titles: Self-Concept of Ability Scales (Brookover et al., 1962), General Self-Concept of Academic Ability (Schurr et al., 1967; Towne & Joiner, 1966), and Michigan State Self-Concept of Ability Scale (Shavelson, Hubner, & Stanton, 1976).

The two-part instrument was titled: Self-Concept of Ability Scale--Form A: General and Self-Concept of Academic Ability in Specific School Subjects. The instrument was versatile since the two sections could be used together or as separate instruments, administered as paper and pencil tests and developed for a group or individual setting. There were eight items with responses ranging from 1 to 5, with 1 being the most positive response. The total response range was 8 to 40 depending on the response for each item. The original instrument was developed for use by junior and senior high students, then modified to become the Self-Concept of Academic Ability Scale, Elementary Form as developed by Brookover et al. (1962) and was the form used in this study.

Scalegram analysis of the original 16 pretest questions was .91 when repeated, with conclusions that self-concept of academic ability could be measured by a paper and pencil test. A study of 1,050 seventh grade students during the

fall of 1960 concluded that when the scale was repeated, coefficients were .95 for males and .96 for females, and that the scoring method was a total score for the eight items. Reliability of general self-concept total score was .82 for males and .77 for females. When grade point average (GPA) and self-concept of ability were compared, the correlation was .57 for each sex (Brookover, Shailer & Paterson, 1964). Brookover's scale, listed as Michigan State Self-Concept of Ability Scale (SCA), was determined to possess reliability high enough to provide study of individual differences, a one-year stability, and a point in time ranking of persons (Shavelson et al., 1976).

Reading difficulty level of vocabulary was measured at third grade level except for 10 words by the Thorndike-Lorge word list in The Teacher's Word Book of 30,000 Words (Thorndike & Lorge, 1944). Seven were at fourth grade, and 3 were at sixth and seventh grade level (Towne & Joiner, 1966). The scale is titled: The Self-Concept of Academic Ability Scale (Brookover et al., 1962). This scale has been cited in over 175 publications and used by over 200 researchers (Brookover, 1989).

These findings indicated that the Self-Concept of Academic Ability Scale was an appropriate instrument for this study.

DATA GATHERING PROCEDURES

Permission to gather information was granted after sending a letter of request to the superintendent; director of planning, research, and pupil services; director of food services; permission's editor for California Achievement Tests; and the supervisor of the Michigan Educational Assessment Office. Brookover, the principal investigator of Project 845, granted permission for use of information and administration of the Self-Concept of Academic Ability Scale.

Parents of surviving students were sent a letter, consent form, and return addressed, metered envelope upon approval from the Western Michigan University Human Subjects Institutional Review Board. Nonrespondents received phone calls, a second set of information or home visits. After signed parental consent forms were received, arrangements were made at the home schools to administer the Self-Concept of Academic Ability Scale. The Scale was read to students.

Information was gathered from computer sheets, pupil personnel files, student files, and report cards by the research team. Part of the team recorded data and others double checked the recordings for accuracy before the next step was encountered.

The 459 survivors became the base pool. They were students from the 1983-1984 kindergarten class who were in the system on October 17, 1990, remained enrolled through May 17, 1991, were administered the scale and data collection, and whose parents submitted a signed consent form.

Data categories and a two-part data entry information sheet were developed to gather existing student information and insure confidentiality . Part I included: name, address, parent, phone, birth date, consent and numerical code. This section was destroyed before entry of data into the computer to ensure confidentiality. Part II included: numerical code, gender, school, recommended placement, actual placement, birth month, half-days absent, hot lunch status, present grade, grades retained, mathematics and reading totals on CAT, category of achievement on the MEAP, GPA, group placement and total score for the Self-Concept of Academic Ability Scale. Code numbers designated the groups: Group F-F (101, 102, etc.), Group JF-JF (301, 302), Group JF-F (501, 502), and Group B-F (701, 702).

DATA ANALYSIS PROCEDURE

Each hypothesis was tested to determine whether the groups were homogeneous or different on the variables and the degree that the variables were the same or different across the groups. An IBM personal computer and software, titled The Survey System (Creative Research Systems, 1987b), were used to list the information, provide analysis, and print reports.

Chi square with contingency coefficient or analysis of variance with the Scheffé method were the test for significance. The level of significance was .05.

The nonparametric test of chi square (x^2) distribution was applied to dependent variables with nominal or less than interval data. This test was appropriate for data in a k x c contingency table. Observed and theoretical frequencies were compared in order to calculate the value of chi square and test for independence. When the value of chi square exceeded the critical value, the null hypothesis was rejected. If rejection of the null hypothesis occurred, a contingency coefficient (C) was calculated to determine the degree of association. The greater the C value, the stronger the relationship between the variables. Chi square was inappropriate when more than 20% of the expected frequencies were less than five or when any cell was less than one.

Analysis of variance (ANOVA) was used to test equality of several means and the null hypothesis. Within-group and between-group variations were calculated. When the value of the probability was equal to or less than alpha = .05, the null hypothesis was rejected. The Scheffé method was applied when the null hypothesis was rejected. This post hoc multiple comparisons procedure can test complex contrasts and equal or unequal group sizes and investigates which group differs in terms of variance or means. The

difference table, which presents the differences between means of the four groups, was essential in determining whether the differences were significant using the Scheffé method.

The next section contains findings of this study.

SELF-CONCEPT OF ACADEMIC ABILITY SCALE
ELEMENTARY FORM

NAME: _____

SCHOOL: _____ GRADE: _____

CODE NO. _____

QUESTIONS	ANSWERS
1. Think of your friends. Do you think you can do school work better, the same or poorer than your friends?	Better than all of them ..... 1 Better than most of them ..... 2 About the same ..... 3 Poorer than most of them ..... 4 Poorer than all of them 5
2. Think of the students in your class. Do you think you can do school work better, the same or poorer than the students in your class?	Better than all of them ..... 1 Better than most of them ..... 2 About the same ..... 3 Poorer than most of them ..... 4 Poorer than all of them 5
3. When you finish high school, do you think you will be one of the best students, about the same as most or below most of the students?	One of the best ..... 1 Better than most of the students ..... 2 Same as most of the students ..... 3 Below most of the students ..... 4 One of the worst 5
4. Do you think you could finish college?	Yes, for sure ..... 1 Yes, probably ..... 2 Maybe ..... 3 No, probably not ..... 4 No, for sure 5
5. If you went to college, do you think you would be one of the best students, same as most or below most of the students?	One of the best ..... 1 Better than most of the students ..... 2 Same as most of the students ..... 3 Below most of the students ..... 4 One of the worst 5
6. If you want to be a doctor or a teacher, you need more than four years of college. Do you think you could do that?	Yes, for sure ..... 1 Yes, probably ..... 2 Maybe ..... 3 No, probably not ..... 4 No, for sure 5
7. Forget how your teachers mark your work. How good do you think your own work is?	Excellent ..... 1 Good ..... 2 Same as most of the students ..... 3 Below most of the students ..... 4 Poor 5
8. How good of a student do you think you can be in this school?	One of the best ..... 1 Better than most of the students ..... 2 Same as most of the students ..... 3 Below most of the students ..... 4 One of the worst 5

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SECTION III

FINDINGS

Independent Variables:

Subjects for this study were the surviving students from the 1983-1984 kindergarten classes who were sixth and seventh graders in 1990-1991. The four groups were:

1. Recommended for first and placed in first.....F-F
2. Recommended for junior first and placed in junior first.....JF-JF
3. Recommended for junior first and placed in first grade.....JF-F
4. Borderline and placed in first.....B-F

Dependent Variables

The four groups were compared on:

1. Gender
2. Birth Month
3. Retention
4. Half-Day Absences
5. Hot Lunch Needy Status
6. Mathematics: Class Placement
7. Mathematics: Grade Point Average
8. Mathematics: California Achievement Tests Totals
9. Mathematics: Grade 4 MEAP Category of Achievement
10. Reading: Class Placement
11. Reading: Grade Point Average
12. Reading: California Achievement Tests Totals
13. Reading: Grade 4 MEAP Category of Achievement
14. Self-Concept of Academic Ability

These data were obtained from existing pupil personnel, individual student, and food service department files, report cards and counselors. The Self-Concept of Academic Ability was administered to the students and the total score was used for comparisons. The statistical computer program, The Survey System (Creative Research Systems, 1987b), was used in this study to list the information, provide analysis, and print reports.

Hypotheses

The study addressed the question of whether junior first grade placement enhanced academic achievement and self-concept of academic ability. The hypotheses were developed to compare four groups of students. Chi square with contingency coefficient or ANOVA with the Scheffé method was used for the test of significance. Each hypothesis and the statistical results from this study follow.

Summary of Findings

Chi square followed by Contingency Coefficient--

6 hypotheses

Analysis of variance (ANOVA) followed by the Scheffé Method--

6 hypotheses

Unable to test--

2 hypotheses

The eight hypotheses with significant findings were:

1. Retention
2. Hot Lunch Needy Status
3. Placement in Low Mathematics Class
4. Low Mathematics California Achievement Tests Totals
5. Placement in Low Reading Class
6. Low Reading Grade Point Average
7. Low Reading California Achievement Tests Totals
8. Low Self-Concept of Academic Ability

Since junior first grade received the impact of these negative findings, the extra year DID NOT enhance academic ability or self-concept of academic ability.

1.GENDER IN 1984-1985 ACCORDING TO GROUP

Chi square was used to compare the frequency of females and males. Analysis of Table 1 showed the proportion of students enrolled by gender was not significantly different in the four groups.

Table 1

Number of Students Enrolled by Gender According to Group

Gender	Group				Total
	F-F	JF-JF	JF-F	B-F	
Male	18	20	14	14	66
Female	12	10	16	16	54
Total	30	30	30	30	120

Note. $\alpha = .05$. $p = .304$. $\chi^2 = 3.64$. $C = .169$. There were no significant findings.

The findings of this study were consistent with the literature review since the frequency was twice the number of males than females retained in junior first grade programs. Group F-F (18 males, 12 females) compared closely with JF-JF (20 males, 10 females). Groups JF-F and B-F were identical (14 males, 16 females). THE COMPARISONS RESULTED IN INSIGNIFICANT FINDINGS. The rejection region was .304 and larger than .05.

2. BIRTH MONTH IN 1977-1978 ACCORDING TO GROUP

Chi square was used to compare the frequency of birth month. Analysis of Table 2 showed the proportion of students enrolled by birth month was not significantly different in the four groups.

Table 2

Number of Students Enrolled by Birth Month According to Group

Birth month	Group				Total
	F-F	JF-JF	JF-F	B-F	
7/77-11/77 and 12/77-5/78	18	15	14	19	66
6/78-11/78	12	15	16	11	54
Total	30	30	30	30	120

Note. $\alpha = .05$. $p = .515$. $\chi^2 = 2.29$. $C = .136$. There were no significant findings.

The findings of this study were inconsistent with the literature review since the majority of the younger students were placed in Group JF-F (16), followed by JF-JF (15), F-F (12) and B-F (11). THE COMPARISONS RESULTED IN INSIGNIFICANT FINDINGS. The rejection region was .515 and larger than .05.

3. RETAINED VERSUS GROUP

Chi square with contingency coefficient was used to compare the frequency of retention of the groups. Analysis of Table 3 showed the proportion of students retained in each group was significantly different in the four groups.

Table 3

Number of Students Retained According to Group

Status	Group				Total
	F-F	JF-JF	JF-F	B-F	
Retained	5	30	16	8	59
Passed	25	0	14	22	61
Total	30	30	30	30	120

Note. $\alpha = .05$. *$p = .001$. $\chi^2 = 49.98$. $C = .542$. *There were significant findings.

The findings of this study were consistent with the literature review since the frequency of students retained in junior first grade was greater than the other groups. The observed frequencies recorded were JF-JF (30 or 100%), JF-F (16 or 53.3%), B-F (8 or 26.6%) and F-F (5 or 16.6%). These comparisons indicated that a large number of this sample was retained (49.1%). THE COMPARISONS RESULTED IN SIGNIFICANT FINDINGS. The rejection region was .001 and less than .05. This data showed an association greater than zero with the contingency coefficient equal to .542.

4. HALF-DAY ABSENCES IN 1989-1990 ACCORDING TO GROUP

ANOVA was used to test the frequency of half-day absences. Analysis of Table 4 indicated the means of the four groups were not significantly different from each other.

Table 4

Difference Table for Half-Day Absences According to Group

		Group and mean		
Group	Mean	JF-JF	JF-F	B-F
		17.17	16.70	14.73
F-F	12.67	4.50	4.03	2.06
JF-JF	17.17		-0.47	-2.44
JF-F	16.70			-1.97

Note. α = .05. df = 3, 116, 119. F = .690. p = .563. n = 120. There were no significant findings.

The findings of this study were inconsistent with the literature review since absences for junior first graders were not higher than for the other groups. Reasons that this inconsistency may have occurred are the district's policy of calling the homes of students absent on that day, lowering of grades for absences and parent desire for a quality education. THE COMPARISONS RESULTED IN INSIGNIFICANT FINDINGS. Probability was .563 and larger than .05.

5. HOT LUNCH NEEDY STATUS IN 1989-1990 ACCORDING TO GROUP

Chi Square with contingency coefficient was used to compare hot lunch status with group. Analysis of Table 5 indicated that the proportion of needy students was significantly different in the four groups.

Table 5

Number of Students With Needy Hot Lunch Status According to Group

Lunch status	Group				Total
	F-F	JF-JF	JF-F	B-F	
Needy	4	14	9	6	33
Not needy	26	16	21	24	87
Total	30	30	30	30	120

Note. $\alpha = .05$. *$p = .023$. $\chi^2 = 9.49$. $C = .271$. *There were significant findings.

The findings of this study were consistent with the literature review since a greater number of needy students were placed in the junior first program. Data for analysis included totals for each group rather than for individual students. The observed frequency for the groups was JF-JF (14), JF-F (9), B-F (6) and F-F (4). THE COMPARISONS RESULTED IN SIGNIFICANT FINDINGS. The rejection region was .023 and less than .05. This data showed an association greater than zero with the contingency coefficient equal to .271.

6. MATHEMATICS: CLASS PLACEMENT IN 1990-1991 ACCORDING TO GROUP

Chi square with contingency coefficient was used to compare mathematics class placement. Analysis of Table 6 showed the proportion of students in each mathematics class was significantly different in the four groups.

Table 6

Number of Students in Each Mathematics Class According to Group

Mathematics: Class placement	Group				Total
	F-F	JF-JF	JF-F	B-F	
Low	2	10	11	5	28
Middle	12	14	13	8	47
High	16	6	6	17	45
Total	30	30	30	30	120

Note. $\alpha = .05$. *$p = .004$. $\chi^2 = 19.32$. $C = .372$. *There were significant findings.

The findings of this study were consistent with the literature review since students placed in junior first grade programs remained in the lower mathematics class.

The high and low placements showed dissimilarity. At high, the frequencies were JF-JF and JF-F the same (only 6), followed by B-F (17) and F-F (16). At low, the frequencies were JF-F (11), JF-JF (10), B-F (5) and F-F (2). Students

placed in the middle level of mathematics class were similar across the four groups, B-F (8), F-F (12), JF-F (13) and JF-JF (13). The JF-JF and JF-F groups comprised 75.0% of the students in the low level. THE COMPARISONS RESULTED IN SIGNIFICANT FINDINGS. The rejection region was .004 and less than .05. This data showed an association greater than zero with the contingency coefficient equal to .372.

7. MATHEMATICS: GRADE POINT AVERAGE IN 1989-1990 ACCORDING TO GROUP

ANOVA was used to test grade point average according to group. Analysis of Table 7 indicated the means of the four groups were not significantly different from each other. The analysis was approaching the level of significance.

Table 7

Difference Table for Mathematics: Grade Point Average According to Group

		Group and mean		
Group	Mean	JF-JF	JF-F	B-F
		2.59	2.51	2.86
F-F	3.00	-0.41	-0.49	-0.14
JF-JF	2.59		-0.08	0.27
JF-F	2.51			0.35

Note. $\alpha = .05$. $df = 3, 116, 119$. $F = 2.492$. $p = .062$. $n = 120$. There were no significant findings, although probability was approaching significance.

The findings of this study were inconsistent with the literature review since grade point average in mathematics was not lower for students in the junior first grade programs. The district's school improvement project resorts to grades of A, B, and I. When calculating grade point average, the higher numerical calculations would result in higher averages. Perhaps, the students are proficient in mathematics. THE COMPARISONS RESULTED IN INSIGNIFICANT FINDINGS. Probability was .062 and larger than .05.

8. MATHEMATICS: CALIFORNIA ACHIEVEMENT TESTS TOTALS ACCORDING TO GROUP

ANOVA with the *Scheffé method* was used to test mathematics California Achievement Tests total. Table 8 indicated the means of the four groups were significantly different from each other.

Table 8

Difference Table for Mathematics: California Achievement Tests Total According to Group

		Group and mean		
Group	Mean	JF-JF	JF-F	B-F
		48.87	52.00	63.48
F-F	61.00	-12.13	-9.00	2.48
JF-JF	48.87		3.13	14.61*
JF-F	52.00			11.48

Note. $\alpha = .05$. $df = 3, 111, 114$. $F = 4.875$. *$p = .004$. $n = 115$. *There were significant findings.

The findings of this study were consistent with the literature review since students in junior first grade progrms continued to score lower in mathematics on standardized tests. The B-F group had higher mathematics CAT totals than the JF-JF group. THE COMPARISONS RESULTED IN SIGNIFICANT FINDINGS. Probability was .004 and less than .05.

9. MATHEMATICS: GRADE 4 MEAP CATEGORY OF ACHIEVEMENT ACCORDING TO GROUP

This hypothesis was unable to be tested because the expected frequencies did not meet the requirements of chi square.

Table 9

Number of Students Receiving Category 3 or 4 on the MEAP Mathematics According to Group

Mathematics: MEAP category	Group				Total
	F-F	JF-JF	JF-F	B-F	
Category 3	3	6	1	0	10
Category 4	26	17	24	25	92
Total	29	23	25	25	102

Note. This variable was unable to be tested since the test results of chi square are meaningless when more than 20% of the cells have less than 5 as the expected frequency. Cells can be combined; however, the results must be meaningful. These data do not lend themselves to meaningful combinations.

The cells would have to be collapsed in Category of Achievement 3. However, when cells were collapsed, no meaningful question could be answered. The combined expected cells' frequencies were less than 5 in 20% or more of the cells and, thus, chi square was inappropriate.

Review of Table 9 indicated that Category 4, the highest category, recorded 90.1% of the frequencies with all Category 4 cells listing 2-digit frequencies. There were no

responses for Category 1 (0-25% mastery) or Category 2 (25-50% mastery) since all subjects merited placement in Category 3 or 4 (50-75% and 75-100% mastery). Caution must be taken because no special education students are included since they are excused from taking the MEAP mathematics tests. In general, these were positive recordings for the district.

10. READING: CLASS PLACEMENT IN 1990-1991 ACCORDING TO GROUP

Chi square with contingency coefficient was used to compare reading class placement. Analysis of Table 10 showed the proportion of students in each reading class was significantly different in the four groups.

Table 10

Number of Students in Each Reading Class According to Group

Reading: Class placement	Group				Total
	F-F	JF-JF	JF-F	B-F	
Low	5	16	5	2	28
Middle	4	8	12	7	31
High	21	6	13	21	61
Total	30	30	30	30	120

Note. $\alpha = .05$. *$p = .001$. $\chi^2 = 30.79$. $C = .451$. *There were significant findings.

The findings of this study were consistent with the literature review since students placed in junior first grade programs remained in the lower reading class.

Students placed in the high, middle and low reading class were dissimilar across the groups. Placement was most similar with observed frequencies at the high level for both F-F and B-F (21). The frequency decreased for JF-F (13), and

JF-JF (6). The low frequency for JF-JF was 9.8% of the total number of students in the high level.

At the middle level, JF-F (12) recorded the highest observed frequency, followed by JF-JF (8), then B-F (7) and F-F (4). The lowest frequency, for F-F, was 12.9% of the total number of students in the middle level.

At the low level, JF-JF recorded the highest observed frequency (16), followed by both F-F and JF-F (5) and B-F (2). The lowest frequency, for B-F, was 7.1% of the total number of students in the low level. THE COMPARISONS RESULTED IN SIGNIFICANT FINDINGS. The rejection region was .001 and less than .05. This data showed an association greater than zero with the contingency coefficient equal to .451.

11. READING: GRADE POINT AVERAGE IN 1989-1990 ACCORDING TO GROUP

ANOVA with the Scheffé method was used to test grade point average according to group. Analysis of Table 11 indicated the means of the four groups were significantly different from each other.

Table 11

Difference Table for Reading: Grade Point Average According to Group

		Group and mean		
Group	Mean	JF-JF	JF-F	B-F
		2.54	2.63	3.05
F-F	3.33	-0.79*	-0.70*	-0.28
JF-JF	2.54		0.09	0.51
JF-F	2.63			0.42

Note. $\alpha = .05$. $df = 3, 116, 119$. $F = 7.414$. *$p = .000$. $n = 120$. *There were significant findings.

The findings of this study were consistent with the literature review since grade point average in reading was lower for students in the junior first grade programs. Groups JF-JF and JF-F recorded lower grade point averages than F-F. The COMPARISONS RESULTED IN SIGNIFICANT FINDINGS. Probability was .000 and less than .05.

12. READING: CALIFORNIA ACHIEVEMENT TESTS TOTALS ACCORDING TO GROUP

ANOVA with the Scheffé method was used to test reading California Achievement Tests totals. TAble 12 indicated the means of the four groups were significantly different from each other.

Table 12

Difference Table for Reading: California Achievement Tests Total According to Group

		Group and mean		
Group	Mean	JF-JF	JF-F	B-F
		45.93	52.42	59.38
F-F	62.76	-16.83*	-10.34	-3.38
JF-JF	45.93		6.49	13.45*
JF-F	52.42			6.96

Note. α = .05. df = 3, 109, 112. F = 5.637. *p = .002. n = 113. *There were significant findings.

The findings of this study were consistent with the literature review since students in junior first grade programs continued to score lower in reading on standardized tests. Group JF-JF scored lower than F-F, and JF-F scored lower than B-F. THE COMPARISONS RESULTED IN SIGNIFICANT FINDINGS. Probability was .002 and less than .05.

13. READING: GRADE 4 MEAP CATEGORY OF ACHIEVEMENT ACCORDING TO GROUP

This hypothesis was unable to be tested because the expected frequencies did not meet the requirements of chi square.

Table 13

Number of Students Receiving Category 1, 2, 3, or 4 on MEAP Reading According to Group

Reading MEAP category	Group				Total
	F-F	JF-JF	JF-F	B-F	
Categories 1, 2, and 3	2	4	3	3	12
Category 4	27	19	22	22	90
Total	29	23	25	25	102

Note. This variable was unable to be tested since the test results of chi square are meaningless when more than 20% of the cells have less than 5 as the expected frequency. Cells can be combined; however, the results must be meaningful. These data do not lend themselves to meaningful combinations.

The cells would have to be collapsed in Categories 1 and 2. However, when cells were collapsed, no meaningful question could be answered. The combined expected cells' frequencies were less than 5 in 20% or more of the cells and, thus, chi square was inappropriate.

Review of Table 13 indicated that Category 4, the highest category, recorded 88.2% of the frequencies with all Category 4 cells listing 2-digit frequencies. Categories 1

and 2, and 3 recorded 12 observed frequencies, which was 11.7% of the total. Caution must be taken because no special education students' scores are included since they are excused from taking the MEAP reading tests. In general, these were positive recordings for the district.

14. SELF-CONCEPT OF ACADEMIC ABILITY IN 1990-1991 ACCORDING TO GROUP

ANOVA with the Scheffé method was used to test the self-concept of academic ability according to group. Analysis of Table 14 indicated the means of the four groups were significantly different in the four groups. Total scores for the scale were used in this study. A higher score translated into having a lower self-concept of academic ability.

Table 14

Difference Table for Self-Concept of Academic Ability According to Group

		Group and mean		
Group	Mean	JF-JF	JF-F	B-F
		19.23	17.33	17.23
F-F	15.20	4.03*	2.13	2.03
JF-JF	19.23		-1.90	-2.00
JF-F	17.33			-0.10

Note. $\alpha = .05$. $df = 3, 116, 119$. $F = 5.859$. *$p = .001$. $n = 120$. *There were significant findings.

The findings of this study were consistent with the literature review since needy students and those who experience junior first grade programs have a lower

self-concept of academic ability. The JF-JF group had a lower self-concept of academic ability than the F-F group. THE COMPARISONS RESULTED IN SIGNIFICANT FINDINGS. Probability was .001 and less than .05

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SECTION IV

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